

## NMCP COVID-19 Report: Tuesday, 31 March 2020

**Prepared by:** Tracy Shields, MSIS, AHIP (Reference Medical Librarian, NMCP Library Services)  
<tracy.c.shields2.civ@mail.mil>

**Disclaimer:** I am not a medical professional.

### Statistics (as of Tuesday, 31 March at 1100)

<i>United States</i>	<i>Virginia</i>
<p><a href="#"><u>JHU CSSE</u></a> Confirmed Cases: 165,874 NY: 67,384 Total deaths: 3,173 NY: 1,342 Total recovered: 5,995</p> <p><a href="#"><u>Dept of Veterans Affairs</u></a> Positive Veteran Cases: 1,166</p>	<p><a href="#"><u>VA Dept of Health</u></a> Number of people tested: 13,401 Total cases: 1,250 Chesapeake: 23 Hampton: 13 Norfolk: 27 Peninsula: 89 Portsmouth: 12 Suffolk: 4 Virginia Beach: 65 Total hospitalizations: 165 Total deaths: 27</p> <p><a href="#"><u>Dept of Veterans Affairs</u></a> Hampton VAMC: 2 inpatient, 1 outpatient</p>

### Evidence Summaries

Numerous entities have ongoing initiatives to discover, assess, synthesize, and disseminate the emerging literature surrounding COVID-19. The University of Oxford's Centre for Evidence-Based Medicine (CEBM) in particular has released reports detailing their findings. Of note:

#### [What is the effectiveness and safety of antiviral or antibody treatments for coronavirus?](#)

#### *VERDICT*

The current evidence for the effectiveness and safety of antiviral therapies for coronavirus is inconclusive and suffers from a lack of well-designed prospective trials or observational studies, preventing any treatment recommendations from being made. However, it is clear that the existing body of evidence is weighted heavily towards ribavirin, which has not

shown conclusive evidence of effectiveness and may cause harmful adverse events so future investigations may consider focusing on other candidates for antiviral therapy.

[Chloroquine and hydroxychloroquine: Current evidence for their effectiveness in treating COVID-19 \(March 25, 2020\)](#)

*VERDICT*

Several in vitro studies report antiviral activity of chloroquine and hydroxychloroquine against SARS-CoV-2. In vivo data, although promising, is currently limited to one study with considerable limitations. On the basis of the weak evidence available to date, treatment guidelines have already incorporated the usage of chloroquine/hydroxychloroquine for certain patients with COVID-19.

Further research should address the optimal dose and duration of treatment, and explore side effects and long-term outcomes.

There is a higher risk of side effects in the presence of renal and liver impairment, and there have been isolated reports of COVID-19 disease-causing renal and hepatic injury.

Over twenty in vivo clinical trials have already been registered to test the use of chloroquine and hydroxychloroquine for the treatment of COVID-19.

Contraindications for the use of these drugs must be checked for each individual before treatment. Empirical evidence suggests that hydroxychloroquine has a better safety profile, and it might therefore be preferable to focus research efforts on this less toxic metabolite.

[Comparative accuracy of oropharyngeal and nasopharyngeal swabs for diagnosis of COVID-19 \(March 26, 2020\)](#)

*VERDICT*

The only current COVID-19 specific data comparing [oropharyngeal swabs (OP)] with [nasopharyngeal swabs (NP)] comes from two low quality, non-peer-reviewed studies and should be viewed with caution. It is not possible to accurately assess sensitivity from the existing data and there are no data to assess the diagnostic impact of combining both tests.

We found two COVID-19 studies, one with 213 patients and 205 OP and 490 NP samples (1) and another with nine patients and an unknown number of samples (2). The smaller study by Wolfel found no difference in detection rates between OP and NP but Yang, the larger of the two studies, reported OP swabs detected the COVID-19 virus less frequently than NP swabs and should not be used in place of NP swabs. This difference was most notable at days 8+ after illness onset, with about a 20-percentage point minimum difference in positive rates between OP and NP swabs. The difference was less at 0-7 days, with about 60% COVID-19 infected patients positive on OP vs about 70% on NP.

Both studies recruited hospitalised patients and it is unclear whether the primer used in the RT-PCR was the same as used in other countries. Applicability to other healthcare settings is therefore uncertain. Overall, the data are not robust but we would caution against relying on OP alone over NP.

[What is the efficacy of standard face masks compared to respirator masks in preventing COVID-type respiratory illnesses in primary care staff? \(March 24, 2020\)](#)

*VERDICT*

Systematic review evidence provides cautious support for the use of standard surgical masks in non aerosol-generating procedures (AGPs), though the empirical studies underpinning this conclusion were not in a COVID-19 population, and only one was in a community setting. It is clear from the literature that masks are only one component of a complex intervention which must also include eye protection, gowns, behavioural measures to support proper doffing and donning, and general infection control measures

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) has developed a living document that addresses knowns and unknowns surrounding COVID-19 ([pdf last updated 26 March 2020](#)).

"The Master Question List (MQL) is intended to quickly present the current state of available information to government decision makers in the operational response to COVID-19 and allow structured and scientifically guided discussions across the federal government without burdening them with the need to review scientific reports, and to prevent duplication of efforts by highlighting and coordinating research."

**Recent Literature of Interest**

[Anesthesia](#): Consensus guidelines for managing the airway in patients with COVID-19

- Extensive guidelines with a one-page summary on how to intubate a COVID-19 patient, along with visuals that demonstrate layout of room, a checklist, and flowcharts for critical ill adults (e.g., "can't intubate, can't oxygenate"). Highly recommend viewing full text.

[Emerg Med Pract](#): Novel 2019 coronavirus SARS-CoV-2 (COVID-19): An updated overview for emergency clinicians **Full text via ILL (attached)**

- Lengthy (47 pages) overview with focus on emergency department setting, including: epidemiology; virology; prevention ("flattening the curve"); use of PPE; imaging; diagnosis and management; pediatric-specific issues; helpful resources; and timeline and lessons learned from Italy.

JAMA: Treatment of 5 Critically Ill Patients With COVID-19 With Convalescent Plasma

- "Findings: In this uncontrolled case series of 5 critically ill patients with COVID-19 and acute respiratory distress syndrome (ARDS), administration of convalescent plasma containing neutralizing antibody was followed by an improvement in clinical status. Meaning: These preliminary findings raise the possibility that convalescent plasma transfusion may be helpful in the treatment of critically ill patients with COVID-19 and ARDS, but this approach requires evaluation in randomized clinical trials."

JAMA: Possible Vertical Transmission of SARS-CoV-2 From an Infected Mother to Her Newborn

- Research letter from authors based in Wuhan, China. Mother with COVID-19 presented on 28 January with fever, nasal congestion, and respiratory problems. On 22 February she delivered girl infant via cesarean in a negative-pressure isolation room, with mother wearing N95 mask and not touching her baby; the infant was quarantined in NICU. "At 2 hours of age, the SARS-CoV-2 IgG level was 140.32 AU/mL and the IgM level was 45.83 AU/mL. Cytokines were elevated (IL-6, 28.26 pg/mL; IL-10, 153.60 pg/mL), as well as a white blood cell count of  $18.08 \times 10^9/L$ . Chest CT was normal." Mother's breast milk was negative for SARS-CoV-2 on 28 February.

JAMA: Training and Fit Testing of Health Care Personnel for Reusable Elastomeric Half-Mask Respirators (EHMRs) Compared With Disposable N95 Respirators

- Study done by Emory University and University of Texas Health Science Center at Houston as part of outbreak simulation. "This study found that health care personnel can be rapidly fit tested and trained to use the reusable EHMR. Time to achieve fit with EHMRs was not significantly different than with N95 respirators."

TML: COVID-19 - Some Drug-Related Issues

- Brief summary of drugs – ACEIs, ARBs, NSAIDs, and repurposed drugs (lopinavir/ritonavir, – and their possible therapeutic effects for COVID-19. "There is no clinical evidence that ACE inhibitors or ARBs increase or decrease the severity of COVID-19 infection .... The Society of Critical Care Medicine recommends against the use of lopinavir/ritonavir in critically ill patients... Improper prescribing or stockpiling of repurposed drugs could result in toxicity and an inadequate supply for treatment of severe COVID-19 and other important indications, such as influenza and rheumatoid arthritis, and should be avoided. Until clinical trials establish the efficacy and safety of any drug for treatment of COVID-19, the CDC recommends supportive treatment and appropriate management of complications, such as ARDS and bacterial pneumonia."

## Future Trends and Questions

- based on news reports, social media, and other current awareness sources

### *Military*

A recent analysis done by the company Govini looks at potential impact of COVID-19 on the military ([Defense One](#)). Of note, the Hampton Roads area is *not* singled out as a hotspot on the map developed as part of the analysis, which can be found here: <https://www.govini.com/wp-content/uploads/2020/03/Govini-DoD-COVID19-Impact.pdf>

"COVID-19 among troops jumped almost 60 percent this week, as their rate surpasses the U.S. at large. There are 227 cases of coronavirus among active duty service members, according to Defense Department data as of Wednesday morning, up from 133 on Monday. The number of recoveries has also risen, the data shows, with 19 troops returned to duty total, 15, since Monday." ([Military Times](#))

### *PPE & Infection Control*

Shortages and alternatives to standard personal protective equipment is being noted by numerous sources ([CIDRAP](#)), and commentary on how to deal with the shortages ([CIDRAP](#)).

SARS-CoV-2 may be stable for hours on certain surfaces ([NIH](#)).

The European Centre for Disease Prevention and Control has published a technical report outlining guidance for cleaning/disinfection of SARS-CoV-2 contaminated environments, including healthcare and non-healthcare settings ([ECDC](#)).

Changes to cleaning and sterilizing materials, including N95 masks, is being investigated ([UTRF](#)).

"There is limited guidance and clinical research to inform on the use of reusable cloth face masks for protection against respiratory viruses. Available evidence shows that they are less protective than surgical masks and may even increase the risk of infection due to moisture, liquid diffusion and retention of the virus." ([ECDC](#))

There are discussions and crowdsourcing movements about providing PPE to healthcare professionals; this includes sharing sewing patterns, 3D printing guides, and other DIY projects to support front-line providers.

### *Symptoms, Co-infections*

According to a preliminary analysis from Stanford Medicine, about 1 in 5 people with COVID-19 are also infected with other respiratory viruses such as influenza A and B, respiratory syncytial virus, rhinovirus, adenovirus and several types of pneumonia ([Stanford](#)).

"A [loss of taste and smell](#)—hypogeusia and hyposmia, respectively—has been reported as a potential early symptom of SARS-CoV-2 infection. This phenomenon is consistent with case reports of individuals infected with other coronaviruses. While it has not been widely

documented in the scientific literature, there have been [reports](#) of patients exhibiting neurological symptoms, including hyposmia and hypogesia, in Wuhan, China. A more complete understanding of how and why this phenomenon takes place could potentially enable its use in interpreting clinical progression of COVID-19. A study conducted at the Harvard Medical School ([preprint](#)) identified a pathway that could potentially explain these symptoms. Two genes required for SARS-CoV-2 cell entry are expressed by olfactory epithelial and stem cells but not olfactory sensory neurons, which could challenge the hypothesis that there is a neurological basis for the phenomenon." (found via [JHCHS](#))

### *Triage and Palliative Care*

Hospitals are developing contingency plans to deal with resource scarcity of ventilators ([WaPo](#)).

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CIDRAP: Center for Infectious Disease Research and Policy. Hospitals scramble to keep up with CDC N95, mask guidance. Stephanie Soucheray CIDRAP News (20 March 2020). Link: <http://www.cidrap.umn.edu/news-perspective/2020/03/hospitals-scramble-keep-cdc-n95-mask-guidance>

CIDRAP: Center for Infectious Disease Research and Policy. COMMENTARY: What US leaders must do to protect health workers amid COVID-19 supply shortages. Jesse L. Goodman, MD, MPH, and Nicole Lurie, MD, MSPH (26 March 2020). Link: <http://www.cidrap.umn.edu/news-perspective/2020/03/commentary-what-us-leaders-must-do-protect-health-workers-amid-covid-19>

Defense One: Coronavirus Is Rising Around US Military, Defense Infrastructure, Analysis Shows (30 March 2020). Link: <https://www.defenseone.com/threats/2020/03/coronavirus-rising-around-us-military-defense-infrastructure-analysis-shows/164208/>

ECDC: European Union, European Centre for Disease Prevention and Control. Cloth Masks and Mask Sterilisation as Options in Case of Shortage of Surgical Masks and Respirators: Technical Report (26 March 2020). Link: <https://www.ecdc.europa.eu/en/publications-data/cloth-masks-sterilisation-options-shortage-surgical-masks-respirators>

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[https://www.ecdc.europa.eu/sites/default/files/documents/Environmental-persistence-of-SARS-CoV-2-virus-Options-for-cleaning2020-03-26\\_0.pdf](https://www.ecdc.europa.eu/sites/default/files/documents/Environmental-persistence-of-SARS-CoV-2-virus-Options-for-cleaning2020-03-26_0.pdf)

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<https://www.ncbi.nlm.nih.gov/pubmed/?term=32207910>

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JAMA: Pompeii LA, Kraft CS, Brownsword EA, et al. Training and Fit Testing of Health Care Personnel for Reusable Elastomeric Half-Mask Respirators Compared With Disposable N95 Respirators. *JAMA.* Published online March 25, 2020. doi:10.1001/jama.2020.4806. Link: <https://jamanetwork.com/journals/jama/fullarticle/2763841>

JAMA: Shen C, Wang Z, Zhao F, Yang Y, Li J, Yuan J, Wang F, Li D, Yang M, Xing L, Wei J, Xiao H, Yang Y, Qu J, Qing L, Chen L, Xu Z, Peng L, Li Y, Zheng H, Chen F, Huang K, Jiang Y, Liu D, Zhang Z, Liu Y, Liu L. Treatment of 5 Critically Ill Patients With COVID-19 With Convalescent Plasma. *JAMA.* 2020 Mar 27. doi: 10.1001/jama.2020.4783. [Epub ahead of print] PubMed PMID: 32219428. Link: <https://jamanetwork.com/journals/jama/fullarticle/2763983>

JHCHS: Johns Hopkins Center for Health Security. COVID-19 situation reports and fact sheets. Link: <http://www.centerforhealthsecurity.org/resources/COVID-19/index.html>

NIH: National Institutes of Health New Release. New coronavirus stable for hours on surfaces. (17 March 2020). Link: <https://www.nih.gov/news-events/news-releases/new-coronavirus-stable-hours-surfaces> See also NEJM: <https://www.nejm.org/doi/full/10.1056/NEJMc2004973>

Stanford: Stanford Medicine New Center. COVID-19 patients often infected with other respiratory viruses, preliminary study reports. March 29, 2020. Link: <https://med.stanford.edu/news/all-news/2020/03/covid-19-can-coexist-with-other-respiratory-viruses.html> See also: <https://medium.com/@nigam/higher-co-infection-rates-in-covid19-b24965088333>

TML: The Medical Letter on Drugs and Therapeutics. COVID-19 - Some Drug-Related Issues (24 March 2020). Link: <https://secure.medicalletter.org/w5014a>

UTRF: University of Tennessee Research Foundation. Information and FAQs on Performance, Protection, and Sterilization of Masks Against COVID-19 (25 March 2020). Link: <https://utrf.tennessee.edu/information-faqs-performance-protection-sterilization-of-masks-against-covid-19/>

WaPo: Washington Post. Michigan health system has contingency plan to deny ventilators, ICU care to patients with low chance of survival (27 March 2020). Link:

<https://www.washingtonpost.com/world/2020/03/27/coronavirus-latest-news/#link-7LE3MCBPUBA7XFGAZQKQBKCAPQ>

**Other sources to consider discussing (found via DisasterLit):**

*Topic Collections from TRACIE (Technical Resources, Assistance Center, and Information Exchange)* From: Office of the Assistant Secretary for Preparedness and Response [U.S. Department of Health and Human Services] (HHS ASPR)

- COVID-19 Critical Care Surge Resources  
Date Published: 3/27/2020  
Link: <https://asprtracie.hhs.gov/technical-resources/113/covid-19-critical-care-surge-resources/99>
- COVID-19 Drive-Through Testing/Community Screening Resources  
Date Published: 3/27/2020  
Link: <https://asprtracie.hhs.gov/technical-resources/117/covid-19-drive-through-testing-community-screening-resources/99>
- COVID-19 Hospital Triage/Screening Resources  
Date Published: 3/27/2020  
Link: <https://asprtracie.hhs.gov/technical-resources/119/covid-19-hospital-triage-screening-resources/99>
- COVID-19 Alternate Care Site Resources  
Date Published: 3/26/2020  
Link: <https://asprtracie.hhs.gov/technical-resources/111/covid-19-alternate-care-site-resources/99>
- COVID-19 Behavioral Health Resources  
Date Published: 3/26/2020  
Link: <https://asprtracie.hhs.gov/technical-resources/115/covid-19-behavioral-health-resources/99>